

REMARKS

Claims 1-26 are pending. Claims 5-10 and 17-22 are pending. Applicants affirm the election of Group I (claims 1-4, 11-16, 23-26).

The Office Action rejects claims 1-4, 11-16 and 23-26 under 35 U.S.C. § 103(a) as being obvious over Stinson (U.S. Patent No. 5,891,191). The Office Action also rejects claims 1-4, 11-16 and 23-26 under 35 U.S.C. § 103(a) as being obvious over Stinson in view of JP 2002-363675A (hereinafter "JP '675"). These rejections are traversed.

The presently claimed invention is characterized in that a fine wire is produced by melt spinning methods from Co-Cr-Mo alloys having specific composition, thereby improving the structure of the wire. As the Examiner mentions, the Co-Cr-Mo alloy used in the present invention is disclosed in JP'675, and the melt spinning method is known as the applicant mentions in the specification.

However, the Applicant strongly submits that improvement of the wire structure by the melt spinning method from the Co-Cr-Mo alloy specified in the present invention is first disclosed by the applicant.

The present invention recited in claim 1 has a specific feature in which the wire is provided with a uniform structure with a concentration ratio of a Mo segregation phase with respect to other Mo phase of 1.8 or less. This specific feature is not disclosed in JP675' and Stinson.

The present invention is based on the founding "As a result of investigation into the causes, as the fine wire increases in thickness, there are evidently high Mo concentration phases and low phases, which are found to be causes of poor ductility.

Accordingly, by making the Mo concentration uniform, that is, by optimizing the concentration ratio of Mo concentration low phases and Mo concentration high phases, it is known to be possible to obtain fine wires which are excellent in ductility and also in processability." This founding is not disclosed in JP'675.

The present invention recites that concentration ratio of a Mo segregation phase with respect to other Mo phase of 1.8 or less based on the above finding. This specific feature is not disclosed in either of JP'675 and Stinson and would not have been assumed from JP'675 and Stinson.

It should be noted that Stinson contains less than about 5 weight % of Ni, which is an indispensable element to produce a fine wire having a diameter of 200 micrometers or less in Stinson. In contrast, although the present invention does not contain Ni (except for Ni as inevitable impurity), such a fine wire can be produced due to the claimed structure.

The present invention recited in claim 15 has a specific feature in which the internal structure is substantially composed of either gamma phase (Co base solid solution of face-centered cubic system) or epsilon phase (Co base solid solution of hexagonal close-packed system) only, or both of them only. This specific feature is not disclosed in either of JP'675 and Stinson.

The present invention is based on the founding "As a result of investigations into the causes, as the fine wire increases in thickness, there is an unknown phase in addition to the gamma phase and the epsilon phase in the internal structure, and it is found to be a cause of poor ductility. It is also known that the existence of such unknown phase become more evident as the diameter of fine wire increases." The

present invention recites the internal structure which is substantially composed of either gamma phase (Co based solid solution of face-centered cubic system) or epsilon phase (Co base solid solution of hexagonal close-packed system) only, or both of them only based on the above finding. This specific feature is not disclosed in either of JP'675 and Stinson and would not have been assumed from JP'675 and Stinson.

The present invention is characterized in that a fine wire is produced by melt spinning methods from Co-Cr-Mo alloys having specific composition, thereby improving the structure of the wire and improving the ductility of the wire. Such specific feature and advantages are not taught or suggested by JP'675 and Stinson, alone or in combination. Therefore, Applicants respectfully submit that the present inventions would not have been obvious from the cited references.

Reconsideration and withdrawal of the rejections of claims 1-4, 11-16 and 23-26 under 35 U.S.C. § 103(a) are respectfully requested.

Applicants respectfully submit that this application is in condition for allowance and such action is earnestly solicited. If the Examiner believes that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below to schedule a personal telephone interview to discuss any remaining issues.

In the event this paper is not considered to be timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fee deficiency or credit any overpayment to Counsel's Deposit Account 01-2300, referencing attorney docket number 108421-00096.

Respectfully submitted,



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